

Claims

What is claimed is:

1. A hinge device comprising

a friction-force generating mechanism that has a shaft supporting — rotatably in both the forward and reverse directions — a rotation-side member on the stationary-side member, and that uses friction force to hold the angle of the rotated rotation-side member, and

a torsion bar that penetrates through said shaft in the axial direction, with one end of said torsion bar directly or indirectly fixed to said stationary-side member, and the other end of said torsion bar directly or indirectly fixed to the rotation-side member, and that — by being twisted by the rotation of the rotation-side member in either the forward or reverse direction — stores torque that energizes the rotation-side member in the direction opposite to said rotation of the rotation-side member.

2. A hinge device as set forth in Claim 1, and

wherein said torsion bar is arranged in such a way that the torque is approximately zero when the rotation-side member is approximately perpendicular to the stationary-side member, and that

said torque increases as the angle of the rotation-side member changes, from its approximately perpendicular position, due to the rotation of the rotation-side member in the forward or reverse direction.

3. A hinge device as set forth in Claim 1 or 2, and wherein

hinge brackets — which are connected with the stationary-side member and the rotation-side member, respectively — are attached to said shaft, and

said torsion bar penetrates through these hinge brackets.

4. A hinge device as set forth in any of Claims 1 to 3, and wherein

at least one end of said torsion bar is exposed outside the shaft, and

the exposed end is directly fixed to either the stationary-side member or the rotation side member.

5. A hinge device as set forth in Claim 3 or 4, and wherein

one end of said torsion bar is fixed to and engaged with either a hinge bracket of the corresponding stationary-side member or the corresponding rotation-side member, as the case may be.

6. A hinge device as set forth in any of Claims 3 to 5, and wherein

there is formed in said hinge bracket a relief part that prevents twisting of the torsion bar when the angle of the rotation-side member against the stationary-side member is within a predetermined range.

7. A hinge device as set forth in Claim 1, wherein

said friction-force generating mechanism is equipped with a spring washer that (1) is formed so as to have a U-shaped cross-section, and (2) directly or indirectly overlaps and comes into contact with said shaft under a condition that the spring washer is bent.